



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/522,407	03/09/2000	Toshihiro Shima	Q58164	4033
7590 04/05/2006			EXAMINER	
Sughrue Mion Zinn Macpeak & Seas PLLC			POON, KING Y	
2100 Pennsylvania Avenue NW			ART UNIT	
Washington, DC 20037-3202			PAPER NUMBER	
			2625	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/522,407

Applicant(s)

SHIMA, TOSHIHIRO

Examiner

King Y. Poon

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/16/2005 has been entered.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12, 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 12, 13 are drawn to functional descriptive material NOT claimed as residing on a computer readable medium. MPEP 2106.IV.B.1(a) (Functional Descriptive Material) states:

"Data structures not claimed as embodied in a computer-readable medium are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer."

"Such claimed data structures do not define any structural or functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized."

Claims 12, 13, while defining record medium, do not define a "computer-readable medium encoded with" and is thus non-statutory for that reasons. A record medium can

Art Unit: 2625

range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium encoded with..." in order to make the claim statutory.

"In contrast, a claimed computer-readable medium encoded with the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory." - MPEP 2106.IV.B.1(a)

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 11, 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 11: Claim 11 is claiming writing print data into a memory, reading the written print data out of the memory to generate a request for printing. From the claim, the writing process must be precedently executed before the request for printing can be generated. It unclear how is it possible (from reading the claim language) to precedently executed the writing process after the print request is generated.

Claim 11 is also claiming a generating process for generating a request for printing. Claim 11 line 9 is claiming said requests for printing. It is unclear how the

Art Unit: 2625

"request" become "requests" by an (one) execution of said generation process when claim 11 is claiming a generating process for generating A REQUEST for printing.

Claim 11 recites the limitation "said requests" in line 9. There is insufficient antecedent basis for this limitation in the claim. Nowhere in claims 11 is claiming more than one request before the "said requests."

Regarding claim 12: Claims 12 is claiming changing the priority of the printing task and the printing task is always set at the highest priority. It is unclear how it is possible to change the priority of a printing task and also always having the priority of the printing task at the highest. Once the highest priority of the printing task is changed, the printing task is not set at the highest priority any more.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 6-10, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al (EP 0782067 A2) in view of McDonald et al (US 6,560,627).

Regarding claims 1, 15: Shima teaches a printer (column 6, line 39) provided with an auxiliary storage (column 15, line 1), comprising: a printing task (column 6, lines 57-59, column 7, lines 30-35, column 14, line 24) for executing processing related to the control of a print engine (column 6, line 48) according to a request for printing

Art Unit: 2625

(converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57); an image generation task (task for converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57, column 14, lines 45-50) for generating said request for printing based upon print data sent from an external device (host, column 6, lines 39-46), a task for writing to the auxiliary storage (column 14, lines 15-18, column 15, lines 45-46) by which data related to printing (intermediate print data) is stored in said auxiliary storage, and a task for reading from the auxiliary storage (inherently, the intermediate print data must read out by the management task before the management task can convert the intermediate print data into bitmap, column 14, lines 45-50, column 16, lines 5-15), by which said data stored in said auxiliary storage is read, wherein each of said tasks are exclusively selected (executed alternately; i.e., processing different tasks at different time, column 14, lines 25-30) and executed according to each priority (column 14, lines 25-30 priority, by definition, is something deserving prior attention or preceding earlier in time).

Shima does not state that a relative order of priority among tasks, before the tasks is executed, is dynamically varied when a predetermined events occurs (time the change the order of execution).

McDonald, in the same area of processing tasks, teaches a relative order of priority among tasks, before the tasks is executed is dynamically varied when the another task is to be processed (column 5, lines 55-67, column 6, lines 1-10).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: a relative order of

Art Unit: 2625

priority among tasks, before the task is executed is varied when a predetermined event occurs (time the change the order of execution).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of McDonald because:

1) it would have prevented a task being allowed to run indefinitely as taught by McDonald at column 6, lines 1-10; and 2) it would have ensure a task executes quickly and thus releases the resource that is being hold by the task quickly (column 5, lines 65-67, column 6, line 1).

Regarding claim 2: Shima teaches wherein priorities lower than the priority of said printing task (as discussed before, printing task must has the highest priority before printing task can be processed) is applied to said task for writing to said auxiliary storage and said task for reading from said auxiliary storage.

Regarding claim 3: Shima teaches wherein said predetermined event is a predetermined elapse of time (column 14, lines 25-30).

Regarding claim 4: Shima teaches wherein said predetermined event is an occurrence of a predetermined situation which occurs in a processing of any of tasks (see discussion of claim 1).

Regarding claim 6: Shima teaches wherein a priority lower than the priority of said task for reading from said auxiliary storage is applied to said task for writing to said auxiliary storage (in the situation that the CPU is in the cycle of reading from the auxiliary).

Regarding claim 7: Shima teaches a printer comprising: an auxiliary storage (column 15, lines 45-47) for storing data related to printing; a print engine (column 6, line 48) for executing printing; and a controller (column 6, lines 50-53) comprising: writing means (the program of the controller that writes, column 15, lines 5-10) for storing said data in said auxiliary storage; reading means (the program of the controller that writes, column 15, lines 5-10) for reading said data stored in said auxiliary storage, image generation means (program for converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57, column 14, lines 45-50) for generating a request for printing supplied to said print engine, and printing execution means (program that controls print engine, column 6, lines 55-59) for controlling said print engine, wherein, if a predetermined event occurs during processing for generating said printing request by said image generation means, said writing means is executed more precedent than a generation of said request for printing by said image generation means (see priority discussion of claim 1, and claim 2).

Shima does not state that a relative order of priority among tasks, before the tasks is executed is varied when a predetermined events occurs (time the change the order of execution).

McDonald, in the same area of processing tasks, teaches a relative order of priority among tasks, before the tasks is executed is varied when the another task is to be processed (column 5, lines 55-67, column 6, lines 1-10).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: a relative order of

Art Unit: 2625

priority among tasks, before the tasks is executed is varied when a predetermined events occurs (time the change the order of execution).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of McDonald because: 1) it would have prevented a task being allowed to run indefinitely as taught by McDonald at column 6, lines 1-10; and 2) it would have ensure a task executes quickly and thus releases the resource that is being hold be the task quickly (column 5, lines 65-67, column 6, line 1).

Regarding claim 8: Shima wherein said data related to printing is stored in storage 44 includes print data (print information sent form host, column 6, lines 40-45, column 8, lines 10-20) sent from an external device (host, column 6, lines 40-45).

Shima does not teach to use auxiliary memory for storing print data sent from the host.

However, Shima teaches, to the controller that controls printing, the auxiliary memory 45 and memory 44 are one memory; i.e., the controller treat the two memory as one single memory.

Moreover, Shima further teaches information saved in the RAM 44 can also be saved in the auxiliary memory (column 17, lines 25-30); therefore, Shima indirectly teaches storing print data received from the host.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to use auxiliary memory for storing print data sent from the host.

The reason for doing so would have prevented that main memory 44 from running out of memory space and to bring out the true purpose of the auxiliary memory - assisting the main memory.

Regarding claim 9: Shima teaches wherein said data related to printing stored in memory storage 44 or auxiliary memory 45 (fig. 3) includes at least a part of said request for printing (column 17, lines 7-30, fig. 13).

Shima does not specifically teach to use the auxiliary memory for storing at least a part of said request for printing.

However, Shima teaches, to the controller that controls printing, the auxiliary memory 45 and memory 44 are one memory; i.e., the controller treat the two memory as one single memory.

Moreover, Shima further teaches information saved in the RAM 44 can also be saved in the auxiliary memory (column 17, lines 25-30); therefore, Shima indirectly teaches storing print data received from the host.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to use the auxiliary memory for storing at least a part of said request for printing.

The reason for doing so would have prevented that main memory 44 from running out of memory space and to bring out the true purpose of the auxiliary memory - assisting the main memory.

Regarding claim 10: Shima teaches a printer control method, comprising: a writing process (column 15, lines 5-10) for storing print data (column 8, line 10) as it is

Art Unit: 2625

received from an external device (host, column 8, line 10) in a storage (RAM 44, column 8, lines 5-20), a reading process (column 15, lines 5-10) for reading print data written to said auxiliary storage, a generation process (column 16, lines 5-15) for generating a request for printing based upon said read print data; and a printing process (column 16, lines 35-37) for printing based upon said request for printing, wherein a priority (column 14, lines 25-30 priority, by definition, is something deserving prior attention or preceding earlier in time) of the writing process and a priority of the generation process are reversed every predetermined time interval (alternately, column 14, lines 25-30).

Shima does not teach to use auxiliary memory for storing print data sent from the host.

However, Shima teaches, to the controller that controls printing, the auxiliary memory 45 and memory 44 are one memory; i.e., the controller treat the two memory as one single memory.

Moreover, Shima further teaches information saved in the RAM 44 can also be saved in the auxiliary memory (column 17, lines 25-30); therefore, Shima indirectly teaches storing print data received from the host in an auxiliary memory.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to use auxiliary memory for storing print data sent from the host.

The reason for doing so would have prevented that main memory 44 from running out of memory space and to bring out the true purpose of the auxiliary memory - assisting the main memory.

Shima also does not state that a relative order of priority among tasks, before the tasks is executed, is dynamically varied when a predetermined events occurs (time the change the order of execution).

McDonald, in the same area of processing tasks, teaches a relative order of priority among tasks, before the tasks is executed is dynamically varied when the another task is to be processed (column 5, lines 55-67, column 6, lines 1-10).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: a relative order of priority among tasks, before the tasks is executed is varied when a predetermined events occurs (time the change the order of execution).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of McDonald because: 1) it would have prevented a task being allowed to run indefinitely as taught by McDonald at column 6, lines 1-10; and 2) it would have ensure a task executes quickly and thus releases the resource that is being hold be the task quickly (column 5, lines 65-67, column 6, line 1).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al (EP 0782067 A2) in view of McDonald et al (US 6,560,627) as applied to claims 1, 4 above, and further in view of Zimmerman (US 5,490,237).

Regarding claim 5: Shima teaches does not teach wherein said predetermined event is judgment that quantity of requests for printing generated by said image

generation task and stored to be consumed by said printing task exceeds predetermined quantity.

Zimmerman, in the same area of generating print request to be consumed by a print engine, teaches to start printing when the print request (data buffered in the memory, column 5, lines 25-40) stored to be consumed by the print engine exceeds predetermined quantity.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: the predetermined event, that will trigger a printing priority task by the print engine, is judgment that quantity of requests for printing generated by said image generation task and stored to be consumed by said printing task exceeds predetermined quantity.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of Zimmerman because it would have create a low cost printer that would prevent a print overrun that would cause the page "not printable." (Zimmerman, column 2, lines 1-55, column 2, lines 20-25)

8. Claims 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al (EP 0782067 A2) in view of Welland et al (US 5,247,677).

Regarding claim 12: Shima teaches a printer (column 6, line 39) provided with an auxiliary storage (column 15, line 1), comprising: a printing task (column 6, lines 57-59, column 7, lines 30-35, column 14, line 24) for executing processing related to the

Art Unit: 2625

control of a print engine (column 6, line 48) according to a request for printing (converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57); an image generation task (task for converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57, column 14, lines 45-50) for generating said request for printing based upon print data sent from an external device (host, column 6, lines 39-46), a task for writing to the auxiliary storage (column 14, lines 15-18, column 15, lines 45-46) by which data related to printing (intermediate print data) is stored in said auxiliary storage, and a task for reading from the auxiliary storage (inherently, the intermediate print data must read out by the management task before the management task can convert the intermediate print data into bitmap, column 14, lines 45-50, column 16, lines 5-15), by which said data stored in said auxiliary storage is read, wherein each of said tasks are exclusively selected (executed alternately; i.e., processing different tasks at different time, column 14, lines 25-30) and executed according to each priority (column 14, lines 25-30 priority, by definition, is something deserving prior attention or preceding earlier in time).

Shima also teaches wherein priorities lower than the priority of said printing task (as discussed before, printing task must has the highest priority before printing task can be processed) is applied to said task for writing to said auxiliary storage and said task for reading from said auxiliary storage.

Shima further teaches a program (column 6, lines 50-55) for controlling the printer discussed in claims 1, 2; inherently all program are stored in a recording medium.

Note: the time the printing task is being executed is when the printing task is most precedently executed according to priority.

Shima still further teaches the execution of the different tasks executed by a CPU are based on priority (column 14, lines 40-45) to determine which task get processed.

Shima, does not teach a priority changing section in the scheduler for changing priorities of each of the writing task, reading task, image generating task and printing task stored in a priority table of the CPU, wherein the priority changing section prioritizes the printing task so that it is always set at the highest priority in the priority table and most precedently executed when the CPU is to process the printing task instead of other tasks.

Welland, in the same area of priority based scheduling of different task to be performed by a CPU (column 2, lines 1-32, column 2, lines 57-60, column 3, lines 27-50) teaches it is well known in the art (for priority based scheduling) to have a priority changing section in the scheduler for changing priorities of each of the tasks to be performed by a traditional CPU, such that the tasks can be processed by the CPU in terms, stored in a priority table (fig. 2) of the CPU, wherein the priority changing section prioritizes a particular task so that it is always set at the highest priority in the priority table and most precedently executed when the CPU is to process the particular task instead of other tasks.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: a priority changing section in the scheduler for changing priorities of each of the writing task, reading task,

Art Unit: 2625

image generating task and printing task stored in a priority table of the CPU, wherein the priority changing section prioritizes the printing task so that it is always set at the highest priority in the priority table and most precedently executed when the CPU is to process the printing task instead of other tasks.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of Welland because: (a) it would have provided a well known and well organized method of performing the priority based scheduling of Shima; (a) using a well known method would save users lots of effort, money, and time to research for the implementation of the priority based scheduling of Shima (Shima does not provide detail how the priority based scheduling is carried out in his invention) – Welland and the well known method provides an effort/money/ time saving solution.

Regarding claim 13: Shima teaches a printer (column 6, line 39) provided with an auxiliary storage (column 15, line 1), comprising: a printing task (column 6, lines 57-59, column 7, lines 30-35, column 14, line 24) for executing processing related to the control of a print engine (column 6, line 48) according to a request for printing (converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57); an image generation task (task for converting intermediate print information into bitmap, column 16, lines 5-15, column 6, lines 54-57, column 14, lines 45-50) for generating said request for printing based upon print data sent from an external device (host, column 6, lines 39-46), a task for writing to the auxiliary storage (column 14, lines 15-18, column 15, lines 45-46) by which data related to printing

Art Unit: 2625

(intermediate print data) is stored in said auxiliary storage, and a task for reading from the auxiliary storage (inherently, the intermediate print data must read out by the management task before the management task can convert the intermediate print data into bitmap, column 14, lines 45-50, column 16, lines 5-15), by which said data stored in said auxiliary storage is read, wherein each of said tasks are exclusively selected (executed alternately; i.e., processing different tasks at different time, column 14, lines 25-30) and executed according to each priority (column 14, lines 25-30 priority, by definition, is something deserving prior attention or preceding earlier in time).

Shima also teaches a program (column 6, lines 50-55) for controlling the printer discussed in claim 1; inherently all program are stored in a recording medium.

Shima further teaches the execution of the different tasks executed by a CPU are based on priority (column 14, lines 40-45) to determine which task get processed.

Shima, does not teach a priority changing section in the scheduler for changing priorities of each of the writing task, and image generating task according to a predetermined condition, before said writing task and said image generation task are executed.

Welland, in the same area of priority based scheduling of different task to be performed by a CPU (column 2, lines 1-32, column 2, lines 57-60, column 3, lines 27-50) teaches it is well known in the art (for priority based scheduling) to have a priority changing section in the scheduler for changing priorities of each of the tasks to be performed by a traditional CPU, such that the tasks can be processed by the CPU in terms, stored in a priority table (fig. 2) of the CPU, wherein the priority changing section

Art Unit: 2625

prioritizes a particular task so that it is always set at the highest priority in the priority table and most precedently executed when the CPU is to process the particular task instead of other tasks (predetermined condition, also see event, column 2, lines 32-40).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: a priority changing section in the scheduler for changing priorities of each of the writing task, and image generating task according to a predetermined condition, before said writing task and said image generation task are executed.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of Welland because: (a) it would have provided a well known and well organized method of performing the priority based scheduling of Shima; (a) using a well known method would save users lots of effort, money, and time to research for the implementation of the priority based scheduling of Shima (Shima does not provide detail how the priority based scheduling is carried out in his invention) – Welland and the well known method provides an effort/money/ time saving solution.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shima in view of McDonald et al as applied to claim 1 above, and further in view of Welland et al (US 5,247,677).

Regarding claim 14: Shima teaches the execution of the different tasks executed by a CPU are based on priority (column 14, lines 40-45) to determine which task get processed.

Shima, does not teach the printer further comprise a scheduler that includes a priority table and a priority changing section in the scheduler for rewriting the relative order of priority of the writing task, and image generating task stored in the priority table when the predetermined event occurs.

Welland, in the same area of priority based scheduling of different task to be performed by a CPU (column 2, lines 1-32, column 2, lines 57-60, column 3, lines 27-50) teaches it is well known in the art (for priority based scheduling) to have a priority changing section in the scheduler for changing priorities of each of the tasks to be performed by a traditional CPU, such that the tasks can be processed by the CPU in terms, stored in a priority table (fig. 2) of the CPU, wherein the priority changing section prioritizes a particular task so that it is always set at the highest priority in the priority table and most precedently executed when the CPU is to process the particular task instead of other tasks (predetermined condition, also see event, column 2, lines 32-40).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: the printer further comprise a scheduler that includes a priority table and a priority changing section in the scheduler for rewriting the relative order of priority of the writing task, and image generating task stored in the priority table when the predetermined event occurs.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of Welland because: (a) it would have provided a well known and well organized method of performing the priority based scheduling of Shima; (a) using a well known method would save users lots of effort, money, and time to research for the implementation of the priority based scheduling of Shima (Shima does not provide detail how the priority based scheduling is carried out in his invention) – Welland and the well known method provides an effort/money/ time saving solution.

### ***Response to Arguments***

10. Applicant's arguments filed on 12/16/2005 have been fully considered but they are not persuasive.

With respect to applicant's argument that claim 11 does not have 112 second paragraph issue because there is more than one request for printing, has been considered.

In reply: Claim 11 is claiming a generating process for generating a request for printing. Claim 11 line 9 is claiming said requests for printing. It is unclear how the "request" become "requests" by an (one) execution of said generation process when claim 11 is claiming a generating process for generating A REQUEST for printing.

Claim 11 recites the limitation "said requests" in line 9. There is insufficient antecedent basis for this limitation in the claim. Nowhere in claims 11 is claiming more than one request before the "said requests."

With respect to applicant's argument that claim 12 does not have 112 second paragraph issue because after the printing task is completed and while another task is being excepted, a new printing task would be set at the highest priority; has been considered.

In reply: Claim 12 clearly is claiming "prioritizes said printing task so that it is always set at the highest priority..." and not claiming a new printing task. Applicant is reminded that 112 second paragraph requires "particularly point out and distinctly claim the subject matter which applicant regards as the invention." Claim languages that causes confusion to examiner and the public and preventing the examiner from conducting a proper search are not "particularly point out and distinctly claim the subject matter which applicant regards as the invention."

With respect to applicant's argument that Shima does not teach a relative priority is varied before such tasks are executed, has been considered.

In reply: Shima does not state that a relative order of priority among tasks, before the tasks is executed, is dynamically varied when a predetermined events occurs (time the change the order of execution).

McDonald, in the same area of processing tasks, teaches a relative order of priority among tasks, before the tasks is executed is dynamically varied when the another task is to be processed (column 5, lines 55-67, column 6, lines 1-10).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima to include: a relative order of priority among tasks, before the tasks is executed is varied when a predetermined events occurs (time the change the order of execution).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Shima by the teaching of McDonald because: 1) it would have prevented a task being allowed to run indefinitely as taught by McDonald at column 6, lines 1-10; and 2) it would have ensure a task executes quickly and thus releases the resource that is being hold be the task quickly (column 5, lines 65-67, column 6, line 1).

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is 571-272-7440. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 30, 2006



**KING Y. POON**  
**PRIMARY EXAMINER**